

AMENDMENTS TO THE CLAIMS

CLAIMS:

1. (Canceled)
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59. (Canceled)
60. (New) A system comprising a device for detection and measurement in any food or food substance for concentrations of acrylamides, wherein a sample of food or food substance is collected and mixed into a food or food substance dissolving solution, thereby freeing any bound acrylamide within said food or food substance and subsequently placing said solution onto a substrate of said device;
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- said substrate comprising an enzyme that along with a co-enzyme and heat or light or both heat and light together with a metal or catalyst facilitates conversion of acrylamide to acrylonitrile, and wherein a detection system is employed that measures acrylonitrile concentrations.
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61. (New) The system as in Claim 60, wherein said detection system measures acrylonitrile concentrations corresponding to acrylamide concentrations comprising;
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- an infrared (IR) sensor to measure concentrations of acrylamides from said food or food substance dissolving solution subsequently converted to acrylonitrile concentrations by identifying an IR absorption peak of a carbon-nitrogen triple bond at a wavelength of 2250 cm^{-1} within said solution.

62. (New) The system as in Claim 61, wherein said system also comprises a display indicating a value of said acrylonitrile concentrations corresponding to acrylamide concentrations with a scale that is representative of the correspondence of said concentrations of acrylamides in said solution.
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63. (New) The system as in Claim 61, wherein testing for acrylamide concentrations using said device is completed by a user, such that said device is also suited for home, office, or laboratory use.
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64. (New) The system as in Claim 61, wherein said enzyme is nitrilase.
65. (New) The system as in Claim 61, wherein said enzyme is nitrilase from *Nocardia rhodochrous* LL100-21.
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66. (New) The system as in Claim 61, wherein said enzyme is formadise.
67. (New) The system as in Claim 61, wherein said system and said substrate is maintained in a biochip.
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68. (New) The system as in Claim 61, wherein said co-enzyme is used such that its reaction product is coupled to a colorimetric change wherein said colorimetric change utilizes chromophores.
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69. (New) The system as in Claim 68, wherein said chromophores consist of bromophenol blue, bromocresol green, and chlorophenol red.
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70. (New) A system comprising a device for detection and measurement in any food or food substance for concentrations of acrylamides, wherein a sample of food or food substance is collected and mixed into a food or food substance dissolving solution, thereby freeing any bound acrylamide within said food or food substance and subsequently reacting said solution with an amino acid of a protein such that production of monoclonal antibodies will occur and;

coupling said antibodies with a colored dye substance such that said colored dye substance will indicate concentration of antibodies that bind to said protein, and wherein said detection system is optionally combined with a biochip for home, office, or laboratory use.

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71. (New) A system comprising a device for detection in any food or food substance to detect and measure concentrations of acrylamides wherein a sample of food or food substance is collected and mixed into a food or food substance dissolving solution, thereby freeing any bound acrylamide within said food or food substance and
- 10 subsequently reacting said solution with added DNA sequences or proteins in a cell through which light passes; and subsequently measuring light intensity of light passing through said cell as a function of acrylamide concentration, wherein said light intensity decreases as the concentration of acrylamide increases.

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Respectfully Submitted,

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